

On the mechanism of acetone and diacetyl reactions with halogenophosphoranes

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Abstract

In this study the interaction of acetone and diacetyl with pyrocatecholtrihalogenophosphoranes (PTHP) containing a five-membered cycle which improves the stability of pentacoordinated phosphorus state was first observed. Using NMR spectroscopy technique the reaction of PTHP with acetone is shown to be a quantitative unidirectional process without formation of any stable intermediates. Unlike acetone, diacetyl interaction with phosphoranes results in formation of relatively stable pentacoordinated intermediates, the products of both carbonyl groups reaction.
